EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jeffrey Gluck (Reg. No. 44457) on December 9, 2010.

The application has been amended as follows:

Claims 21-42 and 55-60 are cancelled.

Allowable Subject Matter

2. **Claims 1-20, 43-54, 61 and 62** are allowed, and are renumbered claims 1-9, 12-21, 24, 27-32, 10, 11, 22, 23, 25, 26, 33 and 34, respectively.

3. The following is an examiner's statement of reasons for allowance:

Consider **claims 1, 10, 20 and 43**, the most relevant prior art of record, Jia et al. (US 7,103,325 B1) in view of Rudrapatna (US 2002/0132600 A1), and in further view of Walton et al. (US 2004/0082356 A1), fail to specifically show, disclose or suggest, operating with a first baseband processor, in a first mode, without multi-antenna signal processing by the multi-antenna signal processing circuit.

Jia et al. clearly show and disclose first mode and second mode (a space-time encoding mode is selected to use when transmitting with spatial diversity based on the receive diversity associated with a receiver device and the quality of the transmission channels based on information fed back from the receiver device; selectable space-time encoding modes are preferably space-time transmit diversity encoding and a version of BLAST-type encoding [col. 2 lines 33-40]); radio frequency (RF) multi-antenna access point enhancement circuit comprising: a multi-antenna signal processing circuit situated in a first access point (base station generally includes a control system, a baseband processor, transmit circuitry, receive circuitry, multiple antennas, and a network interface [col. 3 line 67- col. 4 lines 6]) and adapted to: operate with a first baseband processor, so that said first baseband processor handles data transmissions in a first mode between said first access point and a second access point under a first channel transmission condition, and said multi-antenna signal processor handles data transmissions in a second mode between said first access point and said second access point under a second channel transmission condition (receive circuitry receives radio frequency signals through antennas bearing information from one or more remote transmitters provided by mobile terminals. The baseband processor processes the digitized received signal to extract the information or data bits conveyed in the received signal. The multiple antennas and the replicated transmit and receive circuitries provide spatial diversity [col. 3 line 67- col. 4 lines 6, 14-18, and 37-39]).

Rudrapatna shows and discloses a multi-antenna signal processing circuit situated in a first access point and adapted to: operate simultaneously with a first

baseband processor (an antenna array comprises circuitry coupled to the antenna groups to select and activate certain antennas in a group to enable the antenna array to operate in either a beam forming/steering mode, a diversity mode or a MIMO mode or any combination thereof; self routing mechanisms (e.g., code division) to route specific signals to one specific set of antennas (to employ one mode) while simultaneously route another set of signals to another set of antennas (to employ another mode) [paragraphs 25, 28, 30]); first baseband processor handles data transmissions in a first mode between said first access point and a second access point under a first channel transmission condition, and said multi-antenna signal processor handles data transmissions in a second mode between said first access point and said second access point under a second channel transmission condition (first group can also be configured to perform MIMO operations such as BLAST or perform diversity operations by selecting and activating orthogonally polarized antennas from the antenna pairs. Signal source/control circuit **128** along with the switches (120, 122, 124 and 126) can be designed to route signals appearing on paths 130, 132, 134 and 136 to be automatically routed to certain antennas based on characteristics of the signals so that any group in the antenna array can operate in either of the three modes [abstract, paragraphs 25, 28, 30]).

Walton et al. show and disclose receive M independent RF modulated input signals from said second access point when the second channel transmission mode exists between the first access point and said second access point (Different transmission modes may also be used, depending on the number of antennas at the

user terminals and the channel conditions. Each transmission mode is associated with different spatial processing at the transmitter and receiver and may be selected for use under different operating conditions [paragraph 13]); wherein said multi-antenna signal processing circuit operates selectively with a first baseband processor to demodulate RF signals received in a channel from a second access point (At access point **110**, the transmitted uplink signal(s) are received by antennas **724**, demodulated by demodulators **722**, and processed by an RX spatial processor **740** and an RX data processor **742** [paragraph 218]); process said M independent RF modulated input signals using a channel mixing matrix to extract N independent data signals transmitted by said second access point (access point can form the channel response matrix for the N_{ap} selected user terminals and perform QR factorization on H_{mu}. The access point then precodes the N_{ap} data symbol streams with the matrix to obtain N_{ap} precoded symbol streams a, and further processes the precoded symbol streams with the unitary matrix to obtain the N_{ap} transmit symbol streams for transmission to the N_{ap} user terminals [paragraph 327]).

Jia et al., Rudrapatna, and Walton et al., alone or in combination, however, lack the claimed limitation of "without multi-antenna signal processing by the multi-antenna signal processing circuit," therefore this limitations, in conjunction with all the other limitations recited in claims 1, 10, 20 and 43, are novel and unobvious in view of the combination of relevant prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAIME M. HOLLIDAY whose telephone number is (571)272-8618. The examiner can normally be reached on Monday through Friday 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Appiah can be reached on (571) 272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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/Jaime M Holliday/
Examiner, Art Unit 2617

/Charles N. Appiah/
Supervisory Patent Examiner, Art Unit 2617